CENTRAL FILES

FD

Pebruary 3, 1956

TRIP REPORT TO ALBA CRAFT LABORATORY ON JANUARY 23, 1956

- J. A. Quigley, M.D.
- C. E. Schumann and J. A. Huesing

Objective of Trip:

On Monday, January 23, 1956, a trip was made to Alba Craft Laboratory, Oxford, Ohio. The purpose of this trip was to conduct the second in a series of industrial hygiene surveys which have been planned for the Alba Shop. This report is a compendium of the data obtained.

Persons Visited:

Arrangements for this survey were made with Mr. Eugene Albaugh, owner and manager of the Alba Craft Laboratory.

Description of Trip:

The machining operations at the Alba Shop were identical with those of last month when the first survey was made. Pive (5) turnet lathes, two (2) machine lathes, four (4) engine lathes, and three (3) drill presses were being employed in the preparation of hollow drilled uranium slugs.

A. Air Dest Survey:

In order to determine the amount of air contamination resulting from the various machining operations, both breathing zone and general air samples were collected during all operational phases. The results of these samples are summarized in Table I.

Table I

		Operation or Operating Area	Resul High	ts, d, Low	/m/m ³
R	(3)	Hollow drilling slugs with Norey Turret Lathe	41	23	32
RE	(3)	Turning hollow slugs with Cincinnati machine lather	25	14	18
BE	(3)	Deburring ends of slugs with South Bend engine lathe	67	48	5 6
R	(4)	Facing slugs with South Bend Engine lathe	10	0	6

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Table	I	(cont'	d)

		Operation or Operating Area	Resul High	ts, d	m/m ³
BZ	(3)	Reaming hollow drilled slugs with drill press	19	0	6
GA.	(4)	Morey turret lathe area	68	41	53
GA	(3)	South Bend engine lathe area	38	0	13
QA.	(3)	Drill Press Area	33	17	25
GA	(3)	Slug Storage and Scale Area	33	21	28
GA	(4)	Washroom	29	0	15
GA	(2)	Office	56	42	49
GA	(3)	Lunch Area during lunch period	10	8	9

These results indicate all operations and areas within the building are below the MAC. During the previous survey (December 15, 1955) the only operation in excess of the MAC was the facing and de-burring of slugs on the small South Bend engine lathes. Since that time, however, the spindle speed of this machine has been reduced (recommendation from C. E. Bussert to E. Albaugh) thereby eliminating excessive sparking and dusting.

B. Radiation Survey:

During the December, 1955, survey, radiation measurements taken at the various machines indicated a few possible external radiation exposures in excess of the weekly MPD. A recommendation was made at that time to reduce the stockpiling of slugs around the machines and to keep the exposed surfaces of the slugs to a minimum. Similar radiation measurements were taken during this survey at which time the stockpile was considerably reduced at the drill presses, but in the other areas no noticeable reduction had been made. The results of both surveys are shown in Table II for comparison purposes.

Table II

	β / γ (1	ereps/hr) Jan. 23
	Dec. 15 Survey	Jan. 23 Survey
South Bend Engine Lathe Operator #1	3.5	Not operating
South Bend Engine Lathe Operator #2	2.5	1,2

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Table II	(cont'd) β / γ (mrep	s/hr)
	Dec. 15 Survey	Jan. 23 Survey
South Bend Engine Lathe Operator #3	Not operating	1.8
South Bend Engine Lathe Operator #4	Not operating	N.0
South Bend Engine Lathe Operator #5	Not operating	2.8
LeBlond Machine Lathe Operator	4.0	5.8
Cincinnati Machine Lathe Operator	4.5	4.9
Monarch Machine Lathe Operator	5.5	N.0
Morey Lathe Operator #1	6.0	6.3
Morey Lathe Operator #2	3.0	7.5
Morey Lathe Operator #3	N.O	6.0
Morey Lathe Operator #4	2.5	6.5
Novey Lathe Operator #5	M.O	5.8
Drill Press Operator #1	8.0	2.3
Drill Press Operator #2	8.5	3.8
Brill Press Operator #3	6.0	N.O
Drill Press Operator #4	17.0	NCO
Drill Press Operator #5	14.0	2.8

Based on a 40 hour work week the above exposures appear to be within the MPD. However, if an 84 hour work week is to be continued the hourly exposure (as shown above) would have to be kept below 7.1 mreps/hr.

C. <u>Floor Contamination</u>:

Alpha radiation measurements taken on the floor surfaces of the shop resulted as follows: (All measurements obtained with a Juno Survey meter).

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	a d High	/m/100 Low	CM ²
Engine Lathe Area	8000	1000	1500
Turret Lathe Area	4500	500	1000
Drill Press Area	3500	500	1000
Main Aisleway	2500	0	1200
Office	800	0	500
Storage Area	2500	0	500

A part time janitor is employed by the Alba Shop and the floors are cleaned and mopped three times per week. Scattered throughout the building, however, are small deposits of uranium chips imbedded in clumps of sludge which ordinary cleaning and mopping will not remove. Otherwise, floor contamination is minimal.

Conclusions and Recommendations:

Overall hygienic conditions at the Alba Craft Laboratory appear adequate. However, since strict control is necessitated in keeping these conditions within tolerable ranges, the following comments and recommendations are submitted.

- Keep exposed (unlidded) slugs limited to one box per machine. (Recent film badge results indicate a reduction in personnel exposure during the past month).
- 2. Do not allow turnings to pile up on lathe carriages; keep them raked down into coolant trough to avoid fires which may contribute to air contamination.
- 3. To further reduce air contamination, replace and maintain filters in both heating units.
- 4. Continue present practice of adjusting coolant quench and slowing spindle speeds on operations where excessive sparking or dusting is evident.
- 5. Remove present sludge and chip deposits from floor surfaces and keep such floor contamination to a minimum in the future.

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Miscellaneous Comments:

It should be noted that previous Alba recommendations forwarded to C. E. Bussert were promptly acted upon and completed.

C. E. Schumann

Char John man

J. A. Huesing

CES/JAH/1Jm

cc: J. A. Quigley (2x)
C. E. Bussert
R. C. Heatherton
Central File

Nº 6828

Industrial Hygiene or Medical Dept. JH Nos. 11 Date Collected 1/23 by CE T SHOP Type of Sample air dust Analy OHIO Thes operating, 2 machine lathes, 5 es, 3 drill presses operating. Sample Description GA Washroom GA Washroom GA South Bend engine lathe area	S Route zed for F) 3	Alpha X X Beta Ra pH	Date Repo		3-56 atomatic a er 1	by Lab by MW lpha proportion by CJM 41% 42% d/m/M 3
GA Washroom GA Washroom	.02	 		Count		1	d/m/M ³
GA Washroom		15	7	1			
GA Washroom	.02		<u> •2 </u>	20	7.41	2.53	29
		15	•3	20	7.99	2.33	27
GA South Bend engine lathe area	.02	15	.3	20	5.80	3 .2 8	38
by #2 lathe.							•
GA Same as T 723	.02	15	.3	4	10.46	0.21	2
GA Same as T 724	.02	15	•3	0	15.87	n.d.	n•d•
GA Same as T 725	.02	15	•3	0	13.92	n.d.	n.d.
GA Same as T 725	.02	15	•3	0	14.48	n.d.	n.d.
	.02	15	•3	20	6.55	2.89	33
	.02	15	•3	20	9.28	2	23
	ig: Nos	2,	3,4,5				
				<u> </u>			
	.02	15	•3	20	12.14	1.49	17
O GA Same as T 731	.02	15	•3	20	7.72	2.43	28
				<u> </u>			1
						ļ	
_	engine lathes operating. GA Same as T 730	GA Drill press area by #4 press02 Nos. 1.2.5 drill presses operating: Nos engine lathes operating. GA Same as T 730 .02	GA Drill press area by #4 press02 15 Nos. 1.2.5 drill presses operating: Nos. 2, engine lathes operating. GA Same as T 730 .02 15	GA Drill press area by #4 press02 15 .3 Nos. 1.2.5 drill presses operating: Nos. 2.3.4.5 engine lathes operating. GA Same as T 730 .02 15 .3	GA Drill press area by #4 press02 15 .3 20 Nos. 1.2.5 drill presses operating: Nos. 2.3.4.5 engine lathes operating. GA Same as T 730 .02 15 .3 20	GA Drill press area by #4 press02 15 .3 20 9.28 Nos. 1.2.5 drill presses operating: Nos. 2.3.4.5 engine lathes operating. GA Same as T 730 .02 15 .3 20 12.14	GA Drill press area by #4 press02 15 .3 20 9.28 2 Nos. 1.2.5 drill presses operating: Nos. 2.3.4.5 engine lathes operating. GA Same as T 730 .02 15 .3 20 12.14 1.49

NATIONAL LEAD CO. OF OHIO

HEALTH & SAFETY DIVISION

Industrial Hygiene or Medical Dept.						Analytical Chemistry Dept.			
1956 . H.# 182 .ocation ALBA Remarks OXFO	CRAFT	los. 7 Date Collected 1/23 by CES SHOP Type of Sample air dust Analyzed	Route I for F V No	В эз I	CES Npha xx leta Ra bH	Date Repo	orted 1-25- f Analysis <u>Au</u> Data:	itomatic al	lpha proportiona by CJM
Sample No.	Hour	Sample Description	R	T	φ	Count	Time	C/min	d/m/ ^{kd}
т 734	1130	BZ Operator (Burns) facing slug on	.02	1	.02	7	29.96	0.06	10
т 735	1132	South Bend engine lathe. BZ Same as T 734	.02	1	.02	2	15.45	n.d.	n•d•
т 736	1140	BZ Operator (Creech) facing slug on South Bend engine lathe.	.02	3.5	.07	4	12.22	0.16	8
<u>т 737</u> т 738	1145	BZ Same as T 736 BZ #2 drill press operator reaming	.02	3 2	.06 .04	4 6	15.34 15.27	0.09	5 19
		hollow slug (1st ream).	.02	2	•0l4	0	12.83	n.d.	n•d•
т 739 т 740	1155	BZ Same as T 738 BZ #1 drill press operator reaming hollow slug.	 	 	.06	0	14.06	n.d.	n.d.
		\							
								<u> </u>	

Industrial Hygiene or Medical Dept.							Analytical Chemistry Dept.			
1956 . H.# 184 .ocation ALBA Remarks OXFO	CRAFT	los. 10 Date Collected 1/23 by CES SHOP Type of Sample air dust Analyzed		, B	CES Alphaxx Beta Ra bH	Date Repo Method o ———————————————————————————————————	count	56 utomatic s	by Lab by MW alpha prop rtion by CJM 41%	
Sample No.	Hour	Sample Description	R	T	P	Count	Time	C/min	d/m/M	
т 744	1410	BZ Cincinnati machine lathe opera-	.02	3	.06	20	14.41	1.22	14	
	1410	tor turning hollow slugs - turns								
		2 slugs in 3 min.					·			
т 745	1415	BZ Same as T 744	.02	3	.06	20	12.85	1.39	16	
т 746	1420	BZ Same as T 744	.02	3	.06	20	8.72	2.12	25	
T 747	1420	GA By #3 Morey turret lathe.	.02	15	.3	20	4.50	4,27	50	
T 748		GA By #2 Morey turret lathe.	.02	15	•3	20	5.42	3.52	41	
		All 5 lathes operating.	<u> </u>			<u> </u>				
т 749		GA Storage area and scale area.	.02	15	•3	20	7.53	2.49	29	
T 750		GA Same as T 747	.02	15	•3	20	3.30	5.89	68	
т 751		GA Same as T 748	.02	15	•3	20	4.16	4.6 4	54	
T 752		GA Same as T 749	.02	15	•3	20	9.89	1.85	21	
T 753	1454	GA Same as T 749	.02	15	•3	20	6.71	2.81	33	
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/		Industrial Hygiene or Medical Dept.					Analytica	Chemistry De	pt.
Location ALE Remarks OXF	Sample NA CRAFT	Nos. 6 Date Collected 1/23 by CES T SHOP Type of Sample air dust Analyzed HIO	Rout		CES AlphaXX Beta Ra	Date Rep	pived 1-24- orted 1-25- of Analysis Analysis Analysis Analysis	-56	by Lab by MW oha proportions by CJM
			Oil pH		pH	Counting Data: BKGD12 c/min GEO17 c/min			42%
Sample No.	Hour	Sample Description	R	T	P	Count	Time	C/mkm	d/m/M
т 741	1210	GA Lathe area, south end of shop where operators are eating. All	.02	15	•3	13	12.89	0.89	10
		machines shut down 10 minutes prior to sampling period.							
т 742		GA Same as T 741	.02	1 5	•3	13	13.65	0.83	9
T 743		GA Same as T 741	.02	15	•3	12	14.55	0.70	8
		Heating unit in this end of buildi off during above sampling period.	ng						
т 754	1455	BZ Operator of #4 Morey press hollowing out slug - 3-1/2 min.	.02	3.5	.07	9	14.12	0.47	23
T 755	1500	per slug. BZ Same as T 754	.02	3.5	.07	16	1,6.19	0.82	41
T 756	1500	BZ Same as T 754	.02	3.5	.07	13	16.17	0.63	31

Industrial Hygiene or Medical Dept.							Analytical Chemistry Dept.			
1956 I. H.# 185 Location ALBA Remarks OXR	A CRAFT	los. 5 Date Collected 1/23 by CES SHOP Type of Sample air dust Analyze	Route	03	CES Alpha XX Beta Ra pH	Date Reported of Counting	Data:	5 - 56	by Lab by MN lpha proportional by CJM 42%	
Sample No.	Hour	Sample Description	R	T	P	Count	Time	C/min	d/m/N ³	
T 757	1524	GA Office	.02	10	•2	20	7.72	2.47	# 42	
т 758	_ <u> = J=+</u>	GA Office	.02	10	.2	20	5.88	3.28	56	
T 759	1520	BZ #2 South Bend lathe operator	.02	3	.06	14	12.91	0.96	54	
		deburring hollow slug - 2 slug	5 3						-	
		in 3 min.		_						
т 760	1523	BZ Same as T 759	.02	3	.06	15	15.57	0.84	48	
T 761	1526	BZ Same as T 759	.02	3	.06	20	15.41	1.18	67	
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Nº 8113

Location ALB	A CRAFT	Industrial Hygiene or Medical Dept. os. 6 Date Collected 3/28 by CES Type of Sample air dust Analyzed 10 - One machine lathe only operating in south end of building, no other operations.	l for F V No) E D 3	CES Alpha XX Seta Ra oH	Date Repo	eived 3-29 orted 3-30 of Analysis A cpunter Data:)-56 llpha scin 2	by Iab by My tillation by CJM
Sample No.	Hour	Sample Description	R	T	P	Count	Time	C/min	d/m/M ³
7601	1011	BZ LeBlond machine lathe operator	.02	2.25	.045	6	15	0.17	13
		turning O.D. on hollow drilled							
		slug.							 -
7602		BZ Same as 7601	.02	2.25	.045	13	15	0.64	50
7603		BZ Same as 7601	.02	2.25	.045	8	15	0.30	23
		No visible smoke or dust during				 			
		machining operation. However, some		ļ	ļ	-			
		smoke emitted occasionally as turn	ings			<u> </u>			
		burn for a few seconds before beir	g	<u> </u>	ļ				
		raked down into coolant.		<u> </u>	1			<u> </u>	
7604		GA Alongside LeBlond machine lathe	.02	20	•4	52	8.85	3.39	30
		on north end during O.D. turn-		ļ	-			<u> </u>	
		ing.		 		-		 	-
7605		GA Same as 7604	.02	15	•3	32	11.50	2.55	30
7606		GA West side of LeBlond lathe	.02	15	•3	32	9.80	3.04	35
		where operator stands.			<u> </u>				
				†		1			

7.05 (Industrial Hygiene or Medical Dept.					Analytica	Chemistry D	ept.
1956 I. H.# 583	Sample N	Date Collected 3/28 by CES Type of Sample air dust Analyzed		to	CES Ipha XX	Date Rece	orted 4-	9-56 2-56	by Lab
Remarks OXFO	ORD, OH	10 - Operating: 4 turret lathes, 2 thes turning O.D., 2 drill presses	V No	Ве	eta .a		tillation by CJM		
rean	reaming, 1 machine lathe undercutting, 1 Oil pH double drill press deburring, 1 drill press for facing.							GEO_	41% 42%
Sample No.	Hour	Sample Description	R	Т	φ.	Count	Time	C/min	d/m/M ³
7607	1058	BZ #1 Morey turret lathe operator	.02	3.5	.07	21	15	1.17	58
		hollow drilling one slug.							
7608		BZ Same as 7607	.02	3.25		41	17	0.71	38
7609		BZ Same as 7607	.02	3.25	.065	13	15.45	0.61	33
7610		GA Between #1 and #2 Morey lathes,	.02	15	<u>•3</u>	32	6.77	4.50	52
		SE corner #2.	ļ						
7611	1110	GA Same as 7610	.02	15	•3	32	8.56	3.51	41
7612	_	GA SE corner #1 Morey lathe.	.02	15	•3	82	6.80	4.44	50
7613	1242	BZ #1 drill press operator facing	.02	2	•04	25	15	1.40	119
		slugs; 4 per minute (8 slugs).							
		No coolant used on this opera-		<u> </u>					
		tion. Considerable sparking	ļ						1
		noted.	ļ		<u> </u>				
7614		BZ Same as 7613	.02	2	.04	14	15	0.66	56
7615		BZ Same as 7613	.02	2	.04	32	13.02	2.19	186
			-		ļ	 			<u> </u>
						-			
						<u> </u>			1

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HEALTH & SAFETY DIVISION

205/	Industrial Hygiene or Medical Dept.							al Chemistry [Dept.		
ocation ALB	A CRAFT	Jos. 3 Date Collected 3/28 Type of Sample air dust TO	by CES Route Analyzed for F V No	В з Г	ES Upha XX eta Ra SH	Date Repo	ported 3-29-56 by I ported 4-3-56 by I of Analysis Alpha scintillati counter 2 by G ag Data:				
Sample No.	Hour	Sample Description	R	Т	P	Count	Time	C/min	d/m/M³		
7628		BZ Monarch machine lathe open undercutting hollow drill	.ed,	3	.06	10	15	0.40	23		
7629		counter bored slugs (2 sl BZ Same as 7628 (1 slug).	.ugs).	1.5	.03	9	16.57	0.27	31		
7630		BZ Same as 7628 (1 slug).	.02	1.5	•03	5	15	0.06	7		
<u></u>				 							

Nº 2185

ocation Alb Remarks Oxf	H.# 2031 Sample Nos. Date Collected 8/2 by RHS Route to RHS Date Received 8-3-54 Method of Analysis Counting Date:							54	by Lab				
		of machining by our group. Only sawin end of slugs.	ng ar	nd fac	ing	Counting BKGD <u>12</u>		GEO	.19 21 .14 12 .42 37 .12 10				
Sample No.	Hour	Sample Description	Q	Count	Time	c/m	d/m/11 ³						
E 901	1200	BZ Man facing end of slug on small lathe.	.02	1.5	.03	15	38	.19	1				
E 902	1205	BZ Same as E 901	.02	2.0	-04	13	37.2	•14	12				
E 903	1210	BZ Same as E 901	.02	2.0	.04	16	30.5	.42	37				
E 904	1215	BZ Same as E 901	.02	2.0	.04	9	40.35	.12	10				
E 905	1230	BZ Same as E 901	.02	2.0	-01	18	26	•59	51				
E 906	1300	BZ Man sawing one slug on large hack saw (Star).	.02	1.25	.025	32	25	1.18	164				
E 907	1305	BZ Same as E 906	-02	1.25	.025	32	58.57-	•44	61				
E 908	1310	BZ Same as E 906	.02	1.5	.03	25	41	•5	58				
E 909	1315	BZ Same as E 906	.02	1.5	.03	16	30	•43	50				
E 910	1320	BE Same as E 906	.02	1.5	.03	9	27.6	•22	26				
E 911	1325	BZ Same as E 906	.02	1.5	.03	17	32	•43	50				
E 912	1302	GA On desk in smoking area.	.02	30	.60	32	24.95	1.1	6				
E 913	1325	BZ Man cutting one slug on small saw (Peerless).	.02	•75	.015	3 2	49.05	•55	128				

		Industrial Hygiene or Medical Dept.					-	Chemistry Dep	by Lab by Lab by Lab 44 43				
ocation_Alt	oaugh C	losDate Collected 8/2 by RHS raft Shop Type of Sample air dust Analyzed	Route	toR lpha	нз	Date Recei	4 unte r #3						
emarks	ford, O	of maching by our group. Only sawin	ıg and	faci	ng	Counting [Data:		_ by_ Lab				
		on end of slugs.				8KGD12	c/Hr 6	<u>c/</u> H &eo	by Lab by Lab 44 43 44 43 27 53 60 181 105 7 14 11				
ample No.	Hour	Sample Description	R	Т	P	Count	Time	c/m	d/m/M3				
E 914	1/1/10	BZ Man facing slug on Morey lathe.	.02	11	.02	13	35.5	.166	ļ -				
E 915	1/1/2	BZ Same as E 911	.02	1_	.02	15	35	•32	 				
E 916	1/1/1/1	BZ Same as E 914	.02	1	.02	19	40.45	•36	-				
E 917	1/150	BZ Same as E 914	.02	1_1_	.02	32	26.73	1.09					
E 917	1/152	BZ Same as E 914	.02	1	.02	20	27.25	•63	105				
E 919	1335	GA Approx. center of building.	.02	36	.72	32	18.5	1.6	7				
E 919	1417	GA Just across room from E 919.	,02	20	40	32	17.85	1.69	14				
E 921	11/21	GA In back of room.	.02	30	.60	32	15.41	1.97	11				
E 922	1452	GA Close to lathe and saw in opera-	02	15	.30	32	21.66	1.37	15				
		tion.											
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Industrial Hygiene or Medical Dept.						Analytical	Chemistry De	by Lab d/m/k ³ 8 105 31 55 32
First cut on the first billet - was actually only cutting about 1/2 the diameter on this cut.								by Lab
							GEO_	
Hour	Sample Description	R	T	P	Count	Time	c/m	$d/m/ki^3$
1500	BZ Man machining billet on Morey	.02	_3	.06	32	16.74	1.8	105
1503	BZ Same as E 939	.02	3	.06	28	44	•53	31
1506	BZ Same as E 939	.02	3	.06	20	30.5	.65	32
1509	BZ Same as E 939	.02	3	.06	24	30	•7	41
		<u> </u>	•					
	·							
				<u> </u>				
t	t cut of t 1/2 Hour 1500 1503	cut on the first billet - was actually t 1/2 the diameter on this cut. Hour Sample Description 1500 BZ Man machining billet on Morey lathe. 1503 BZ Same as E 939 1506 BZ Same as E 939	cut on the first billet - was actually only on the time on this cut. Hour Sample Description R 1500 BZ Man machining billet on Morey .02 lathe. 1503 BZ Same as E 939 .02 1506 BZ Same as E 939 .02	cut on the first billet - was actually only cutting to 1/2 the diameter on this cut. Hour Sample Description R T T 1500 BZ Man machining billet on Morey .02 3 lathe. 1503 BZ Same as E 939 .02 3 1506 BZ Same as E 939 .02 3 1509 BZ Same as E 939 .02 3	t cut on the first billet - was actually only cutting t 1/2 the diameter on this cut. Hour Sample Description R T Q 1500 EZ Man machining billet on Morey .02 3 .06 lathe. 1503 EZ Same as E 939 .02 3 .06 1506 EZ Same as E 939 .02 3 .06 1509 EZ Same as E 939 .02 3 .06	Method Counting Counting Counting Counting Counting Counting Counting Count Count	Counting Date: Coun	Method of Analysis Counter #8 Counting Date: BKGD 6 c/Hr GEO

Location Alb	augh Cra	Industrial Hygiene or Medical Dept. Date Collected 8-6-54 by RHS St Shop Type of Sample A1r Dust Analyzed	for	alph	3				by Lab.			
cemarks		throughout shop. Two saws, two Mor lathe in operation. Little or no b				Method of	Method of Analysis Counter#1					
	chine.	Tache in Operation. Little of no b	<u> </u>	P T11 (Counting De	eta: 6c/hr 12c/hr	GEO	by Lab. 41% 41%			
Sample No.	Hour	Sample Description	R	T	Q	c ount	time	c/m	d/m/m3			
E801	11:30	BZ - Man facing one slug on Morey	.02	2	.04	16	31.5	.41	33			
# 802	11:34	-	1	1.25	.025	20	44	•35	45			
E803	11:38	BZ - Sparking	.02	1.25	.025	10	3 0	.23	30			
E804	11:42	BZ - Same as E801	.02	1	.02	9	32.5	.18	29			
E805	11:50	BZ - Same as E801	.02	1	.02	13	38	•59	96			
E 806	1330	GA-In center of mom, everything gain	g.02	30	.6	32	7.97	3.82	21			
E 807	1331	BZ-Man sawing one slug on small sa		2.25	.045	28	30.59	.72	52 :			
E808	1335	BZ - Same as E807	.02	2.5		3 2	25.29	1.08	70			
E809	1340	BZ - Same as E807	.02	3	.06	17	36 .5	.27	15			
E810	1345	BZ - Same as E807 - new saw blade	.02	1.5	.03	3 2	18.53	1.5 3	166			
E811	1350	BZ - Same as E810	.02	2	.04	32	14.3	2.04	166			
E812	1404	GA - Between Morey lathe & saw	.02	30	.6	3 2	28'661	.92	* M 5 5			
E813	1355	BZ - Same as E810	.02	3	.06	32	5 .7	5.41	293			
E814	1440	BZ - Making complete pass on one	.02	5.5	.11	32	35.53	•70	21			
E 815	1445	BZ - Facing center, 2" of end	.02	5	.10	33	31.5	.21	7			

-		Industrial Hygiene or Medical Dept.					Analytical (cal Chemistry Dept.	
Location Alb Remarks One maching	e Morey :	Date Collected 8/6/54by RHS aft Shop Type of Sample Air Dust Analyzed lathe and one small lathe facing sluss and two hack saws sawing slugs. The make a full cut of billet.	for	alp One	ha Morey	Date Repor Method of ————————————————————————————————————			by Lab. by Lab.
Sample No.	Hour	Sample Description	R	T	Φ	count	time	c/m	d/m/m 3
E 816	1500	BZ - Man machining billet - taking	.02	3	.06	32	23.36	1.37	80
		1/5 full cut.							
E817	1444	GA - Smoking Area	.02	52	1.04	32	6,68	4.94	17
E 818	1510	BZ - Same as E816	.02	3	.06	32	19.25	1.66	96
E819	1515	BZ - Same as E816	.02	3	.06	32	16-85	1.9	110
E820	1520	BZ - Same as E816	.02	3	.06	32	32.13	•995	58

emarks M	augh Cr	Date Collected 8-17-5 y RHS aft Shop Type of Sample Air Dust Analyzed g both slugs and billets, but not do	for	alph	RHS a	Date Rep	eived $8-18-54$ ported $8-19-54$ of Analysis BC	1	by Lab
						Counting BKGD		GEO	43%
ample No.	Hour	Sample Description	R	7	Q	Count	Time	c/m	$d/m/M^3$
E 701	1330	BZ - Making 2nd rough turning on	.02	5	.10	11	24.25	.32	11
# 702	13/10	small lathe BZ - Same as E 701 (small fire)	.02	4.5	.09	32	31.29	•89	33
E 703	1350	BZ - Same as E 701 (small fire)	.02	5	.10	11	34	.19	6
E 704	1400	BZ - Same as E 701	.02	5	.10	14	35	.27	9
E 705	1410	BZ - Making 1st rough turning on M	.02	4.5	.09	32	19#86	1.48	55
		Morey Lathe							
E 706	1420	BZ - Same as E 705	.02	4.5	.09	14	30	•33	12
E 707	1430	BZ - Same as E 705	.02	4.5	.09	32	20.33	1.44	53
E 708	1440	BZ - Same as E 705	.02	4.5	.09	22	43.7	•3 7	14
E 709	1450	BZ - Machining angle in billet on	.02	5	.10	18	29.3	•48	16
		Morey lathe	<u> </u>		ļ				
E 710	1500	BZ - Same as E 709	.02	5	.10	32	44.65	•58	19
E 711	1510	BZ - Same as E 709	.02	5	.10	32	22.44	1.19	40
E 712	1520	BZ - Same as E 709	.02	5	.10	11	27	.23	8

H.#2114 Sample Nos. Date Collected 8-19-5 by RHS Route to RHS Location Albaugh Craft Shop Type of Sample Air Dust Analyzed for alpha Lemarks Not using self cooling drill on billets, although not a bit of sparking was evident. Date Received 8-20 Method of Analysis Counting Data:									by Lab
							Data: 12 c/Hr	GEO_	43%
mple No.	Hour	Sample Description	R	T	Ą	Count .	Time	c/m	d/m/M ³
E 713	1300	BZ - Making initial drill on billet	.02	3	.06	6	31	n d	nd
		with 1/2 inch drill							
E 714	1305	BZ - Same as E 713	.02	3	.06	5	30	nd	nd
E 715	1310	BZ - Same as E 713	.02	3	.06	5	30	nd	nd
E 716	1315	BZ - Same as E 713	.02	3	.06	7	32.5	•01	•5
E 717	1415	BZ - Making 2nd drill with 1 drill	.02	3	.06	no sa	mlpe submi		
E 718	1420	BZ - Same as E 717	.02	3	.0\$	11	29.45	.17	9
E 719	1425	BZ - Same as E 717	.02	3	.06	10	32	-11	6
E 720	1430	BZ - Same as E 717	.02	3	.06	5	25	nd TEX XX	nd xxx s
E 721	1325	BZ - Reaming one slug on small Morey	.02	2.5	.05	6	35.5	nd	nd
E 722	1330	BZ - Same as E 721	.02		.04	13	46	•08	4
E 7 2 3	1335	BZ - Same as E 721	.02	2.25	.045	9	35	.05	4
# 724	1340	BZ - Same as E 721	.02	2	.04	88	41	nd	nd
E 725	1404	GA - Near inspector inspecting slug	B .02	30	.60	19	34	•35	2
E 726	1435	GA - Same as E725, approx. 5' away	.02		.60	20	29	•48	3

		Industrial Hygiene or Medical Dept.					Analytica	l Chemistry De	by Lab by Lab #3
ocation Alba	augh Cra z drilli	Date Collected 8-19-54 by RHS aft Shop Type of Sample Air Dust Analyze and done on a Morey lathe operating burning or sparking. Considerable	d for at 13	alpha 00 rpi	n.	Date Rec Date Rep Method	by Lab		
spla	ashed at	oout.				Counting BKGD		GEO_	
iample No.	Hour	Sample Description	R	T	P	Count	Time	c/m	d/m/M3
E 727	1500	BZ - Drilling one slug on Morey	.02	4.5	.09	- 8	23	.24	8
E 788	1505	BZ - Same as E 727	.02	4.25	.085	11	45	.14	6
E 729	1510	BZ - Same as E 727	.02	4.5	.09	26	31	•73	28
E 730	1535	BZ - Same as E 727	.02	4.5	.09	12	22	•44	17
E 731	1540	BZ - Same as E 727	.02	4.0	.08	22	34	•54	24
E 732	1505	GA - Smoking area	.02	30	.60	24	37	•54	3
	+						- 		

	Industrial Hygiene or Medical Dept.						Analytic	al Chemistry D	lept.		
	H.# 2538 Sample Nos. 4 Date Collected 12/6 by CS Route to WS ocation Albaugh Craft, Oxford, 0. Type of Sample air dust Analyzed for alpha emarks							2-7-54 2-7-54 Alpha cour	by <u>Lab</u>		
Sample No.	ample No. Hour Sample Description R T							C/min	d/m/M		
E 511		BZ Lathe operator outting slug plugs on small lathe.	.02	4	.08	32	9.17	3.33	1		
E 512		BZ Lathe operator facing slug plugs on small lathe.	.02	4	.08	52	10.72	2.83	150		
539		BZ Same as E 512	.02	4	.08	32	7.38	4.28	196		
540		BZ Lathe operator trueing the milled slug hole.	.02	4	-08	1	18.9	0.95	43		
		Radiation readings: \$ boxes slugs where operator stamps numbe on slug ends - 30 mrep/hr	rs								
		At lathe section by storage - 7 mrep/hr In aisleway near storage - 10 mrap/hr									
			+	<u></u>							